

AMENDMENTS TO THE CLAIMS

1.-33. (Canceled).

34. (Previously presented) A method of signal processing, comprising:

(a) detecting an acoustic excitation at both a first location to provide a corresponding first signal and at a second location to provide a corresponding second signal, the excitation being a composite of a desired acoustic signal from a first source and an interfering acoustic signal from a second source spaced apart from the first source;

(b) determining location of the second source relative to the first source as a function of the first and second signals, which includes delaying each of the first and second signals by several time intervals to provide several delayed first signals and several delayed second signals and providing a time increment representative of separation of the first source from the second source; and

(c) generating a characteristic signal representative of the desired acoustic signal during performance of said determining, the characteristic signal being a function of the time increment.

35. (Previously presented) The method of claim 34, wherein the characteristic signal corresponds to spectral content of the desired acoustic signal and further comprising providing an output signal representative of the desired acoustic signal as a function of the characteristic signal.

36. (Canceled).

37. (Currently amended) The method of claim 34, wherein said determining includes:

~~(b1) —delaying each of the first and second signals by a number of time intervals to provide a number of delayed first signals and a number of delayed second signals; and~~
——(b2) establishing a signal pair, the signal pair having a first member from the delayed first signals and a second member from the delayed second signals, the characteristic signal being determined from the signal pair.

38. (Previously presented) The method of claim 34, further comprising providing an output signal representative of the desired acoustic signal, and wherein the desired acoustic signal includes speech and the output signal is provided by a hearing aid device.

39. (Currently amended) The method of claim 34, wherein said determining further includes:

(b1) converting the first and second signals from an analog representation to a discrete representation;

(b2) transforming the first and second signals from a time domain representation to a frequency domain representation; and

——~~(b3) —delaying each of the first and second signals by a number of time intervals to provide a number of delayed first signals and a number of delayed second signals; and~~

(b4) (b3) establishing a ~~first time increment and~~ a signal pair ~~each~~ representative of separation of the first source from the second source, the signal pair having a first member from the delayed first signals and a second member from the delayed second signals.

40. (Currently amended) The method of claim 39, wherein the characteristic signal corresponds to a fraction with a numerator determined from at least the first and second members, and a denominator determined from at least the ~~first~~ time increment.

41. (Previously presented) The method of claim 39, wherein said generating further includes:

(c1) determining the characteristic signal from the signal pair and the first time increment, the characteristic signal being representative of spectral content of the desired acoustic signal;

(c2) transforming the characteristic signal from a frequency domain representation to a time domain representation; and

(c3) providing an audio output signal representative of the desired acoustic signal as a function of the characteristic signal.

42. (Currently amended) The method of claim 41, further comprising establishing a ~~second~~ further time increment corresponding to separation of the first source from the second source by comparing the delayed first and second signals, and

wherein the ~~first~~ time increment corresponds to a first phase difference, the ~~second~~ further time increment corresponds to a second phase difference, and the characteristic signal includes a spectral representation determined from at least the first and second phase differences.

43. (Canceled).

44. (Previously presented) The method of claim 34, wherein separation of the second source is within five degrees of the first source relative to a zero degree azimuthal reference axis intersecting the first source and a midpoint situated between the first and second locations.

45. (Previously presented) The method of claim 34, further comprising;

(d) establishing a number of location signals each corresponding to a different location relative to the first source; and

(e) selecting the characteristic signal from the location signals, the characteristic signal being representative of the location of the second source relative to the first source, the characteristic signal including a spectral representation of the desired acoustic signal.

46. (Previously presented) A method of signal processing, comprising:

(a) detecting an acoustic excitation at a first location to provide a corresponding first signal and at a second location to provide a corresponding second signal, the excitation being a composite of a desired acoustic signal from a first source and an interfering acoustic signal from a second source spaced apart from the first source;

(b) localizing the second source relative to the first source as a function of the first and second signals, said localizing including establishing a number of location signals each corresponding to a different location relative to the first source, delaying each of the first and second signals by a number of time intervals to provide a number of delayed first signals and a number of delayed second signals, and establishing a signal pair that has a first member from the delayed first signals and a second member from the delayed second signals; and

(c) generating a characteristic signal from the location signals, wherein the characteristic signal includes a spectral representation of the desired acoustic signal from the first source, corresponds to position of the second source, and is determined from the signal pair.

47. (Previously presented) The method of claim 46, further comprising providing an output signal representative of the desired acoustic signal as a function of the characteristic signal.

48. (Currently amended) The method of claim 46, wherein said localizing includes:

~~—(b1)—delaying each of the first and second signals by a number of time intervals to provide a number of delayed first signals and a number of delayed second signals corresponding to the location signals; and~~

~~—(b2)—determining a time increment representative of separation of the first source from the second source, the characteristic signal being a function of the time increment.~~

49. (Canceled).

50. (Previously presented) The method of claim 46, further comprising providing an output signal representative of the desired acoustic signal, and wherein the desired acoustic signal includes speech and the output signal is provided by a hearing aid device.

51. (Currently amended) The method of claim 46, wherein said localizing further includes:

(b1) converting the first and second signals from an analog representation to a discrete representation;

(b2) transforming the first and second signals from a time domain representation to a frequency domain representation; and

~~——(b3) delaying each of the first and second signals by a number of time intervals to provide a number of delayed first signals and a number of delayed second signals; and~~

~~——(b4)~~(b3) establishing a first time increment and a signal pair each representative of separation of the first source from the second source, the signal pair having a first member from the delayed first signals and a second member from the delayed second signals.

52. (Previously presented) The method of claim 51, wherein the characteristic signal corresponds to a fraction with a numerator determined from at least the first and second members, and a denominator determined from at least the first time increment.

53. (Previously presented) The method of claim 51, wherein said generating further includes:

(c1) determining the characteristic signal from the signal pair and the first time increment;

(c2) transforming the characteristic signal from a frequency domain representation to a time domain representation; and

(c3) providing an audio output signal representative of the desired acoustic signal as a function of the characteristic signal.

54. (Previously presented) The method of claim 53, further comprising establishing a second time increment corresponding to separation of the first source from the second source by comparing the delayed first signals and delayed second signals, and

wherein the first time increment corresponds to a first phase difference, the second time increment corresponds to a second phase difference, and the spectral representation of the characteristic signal is determined from at least the first and second phase differences.

55. (Canceled).

56. (Previously presented) The method of claim 1, wherein separation of the second source is within five degrees of the first source relative to a zero degree azimuthal reference axis intersecting the first source and a midpoint situated between the first and second locations.

57. (New) The method of claim 34, wherein the characteristic signal corresponds to a fraction with a numerator determined from a difference between a first member of the delayed first signals and a second member of the delayed second signals, and a denominator determined from at least the time increment.

58. (New) The method of claim 57, which includes providing the delayed first signals from a first multistage delay line and the delayed second signals from a second multistage delay line, the first member being output by a stage of the first delay line corresponding to the location of the second source and the second member being output by a stage of the second delay line corresponding to the location of the second source, and a different stage of each of the first delay line and the second delay line corresponding to location of the first source.

59. (New) The method of claim 58, wherein the difference is representative of a minimized interfering acoustic signal level and provides the characteristic signal representative of spectral content of the desired acoustic signal.

60. (New) The method of claim 46, wherein the generating includes determining the characteristic signal as a fraction with a numerator being a function of a difference between one of the delayed first signals and one of the delayed second signals, the difference being representative of a minimized interfering acoustic signal level, and the fraction having a denominator determined as a function of at least the first time increment.

61. (New) A method of signal processing, comprising:

detecting an acoustic excitation at both a first location to provide a corresponding first signal and at a second location to provide a corresponding second signal, the excitation being a composite of a desired acoustic signal from a first source and an interfering acoustic signal from a second source spaced apart from the first source;

incrementally delaying the first signal to provide a number of delayed first signals and the second signal to provide a number of delayed second signals, a number of different pairings of the delayed first signals and the delayed second signals representing different locations;

localizing the second source relative to one of the different locations as a function of a difference between the members of a corresponding one of the different pairings; and

generating a characteristic signal representative of spectral content of the desired acoustic signal based on the difference and a time increment corresponding to distance separating the first source and the second source.

62. (New) A method of signal processing, comprising:

detecting an acoustic excitation at both a first location to provide a corresponding first signal and at a second location to provide a corresponding second signal, the excitation being a composite of a desired acoustic signal from a first source and an interfering acoustic signal from a second source spaced apart from the first source;

selecting the desired acoustic signal by positioning a reference axis relative to the first source;

localizing the second source relative to the reference axis as a function of the first and second signals; and

generating a characteristic signal representative of the desired acoustic signal during performance of said localizing.

63. (New) The method of claim 62, which includes:

defining the reference axis relative to the first location and the second location; and

moving the reference axis to select a different acoustic signal.

64. (New) The method of claim 63, wherein the detecting the acoustic excitation is performed with a first sensor at the first location and a second sensor at the second location.

65. (New) The method of claim 63, wherein the method is performed with a hearing aid.

66. (New) The method of claim 63, wherein:

the localizing includes establishing a number of delayed first signals each corresponding to a different one of a number of first delay stages of a first delay line and a number of delayed second signals each corresponding to a different one of a number of second delay stages of a second delay line; and

the generating includes determining the characteristic signal as a function of a fraction with a numerator corresponding to a difference between one output of the first delay stages and one output of the second delay stages and a denominator corresponding to a time increment representative of a distance separating the first source and the second source.